REMARKS

I. Status of the Claims

Claims 1-9 are pending in this application, and remain for consideration.

II. Response to the Section 103(a) Rejection over Evans in view of Nierlich and Brahma

Applicant traverses the rejection of claims 1-9 under 35 U.S.C. § 103(a) as unpatentable over Evans et al. (U.S. Pat. No. 5,877,372) in view of Nierlich et al. (U.S. Pat. No. 5,998,685) and Brahma et al. (U.S. Pat. No. 5,482,616), and he respectfully asks the Examiner to reconsider and withdraw the rejection in view of the following remarks.

Applicant currently claims a process comprising (a) oligomerizing isobutylene in the presence of a sulfonic acid resin catalyst to produce a diisobutylene stream containing minor amounts of sulfur impurities; and (b) contacting the diisobutylene stream with a large pore zeolite to produce a diisobutylene product having a reduced amount of sulfur impurities.

As Examiner notes, Evans teaches the dimerization of isobutylene in the presence of a sulfonic acid resin catalyst such as Amberlyst 15. Evans does not teach that the diisobutylene stream contains minor amounts of sulfur impurities nor does Evans teach Applicant's required second step of contacting the diisobutylene stream with a large pore zeolite to produce a diisobutylene product having a reduced amount of sulfur impurities.

Examiner points to Neirlich and Brahma to fill the gap. Brahma teaches a catalyst for hydrogenation and/or dehydrogenation having an improved resistance against deactivation by sulfur compounds. As Examiner notes, Brahma teaches that sulfur compounds are known to adversely affect the lifetime of hydrogenation catalysts. However, although Examiner states that Brahma discloses a supported nickel catalyst, Examiner fails to note that the supported nickel catalyst of Brahma is allegedly an example of a catalyst having improved resistance to sulfur deactivation.

Neirlich teaches a process for preparing butene oligomers from field butanes. As Examiner also notes, Neirlich teaches utilizing zeolites X and Y to remove sulfur compounds from a hydrocarbon feedstock.

Thus, it may be arguably asserted that the combined disclosures of Neirlich and Brahma teach that if one desires to remove sulfur compounds from a hydrocarbon feedstock for a hydrogenation reaction, one may attempt to use zeolites X and Y to remove the sulfur compounds. However, there is nothing in a combination of Evans with the teachings of Neirlich and Brahma that would suggest the currently claimed process.

Applicant respectfully suggests that that the § 103 rejection is improper because the cited prior art does not suggest Applicant's claimed invention, nor does it give one of ordinary skill in the art the motivation to combine the teachings of the cited references. "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, *absent some teaching, suggestion or incentive supporting the combination.*" *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). The mere fact that references can be combined or modified does not render the resultant combination obvious, unless the prior art also suggests the desirability of the combination. In this case, there is no suggestion or incentive to combine the cited prior art.

Specifically, Evans does not describe that the diisobutylene product of olefin dimerization contains sulfur impurities. Therefore Evans is not a proper basis for an obviousness rejection since Evans does not teach the problem or its source. Here, the discovery of the problem results in a patentable invention despite the fact that the solution may have been arguably obvious if the source of the problem was discovered. *Eibel Process Co. v. Minnesoa & Ontario Paper Co.*, 261 U.S. 45 (1923). "A patentable invention may lie in the discovery of the source of a problem even though the remedy may be obvious once the source of the problem is identified. This is part of the 'subject matter as a whole' which should always be considered in determining the obviousness of an invention under 35 U.S.C. 103." *In re Peehs*, 612 F.2d 1287 (CCPA 1980). Where there is no evidence in the prior art that one of ordinary skill in the art would have expected a problem, it is not proper to conclude that an invention, which solves this problem, would have been obvious to a person of ordinary skill in the art.

In fact, the current application, at page 1, l. 30-32, states that the Applicant has "surprisingly found that the use of sulfonic acid-type ion exchange resin catalysts during the oligomerization step results in sulfur impurities in the diisobutylene product." Without this knowledge, there would be no incentive for one of ordinary skill in the art to seek a solution to an unknown problem. Applicant therefore respectfully suggests that Examiner has used impermissible hindsight to re-construct the claimed process from the prior art.

In sum, the prior art would not have suggested to those of ordinary skill in the art that they should carry out Applicant's claimed process.

In view of the foregoing, Applicant respectfully asks the Examiner to reconsider and withdraw the rejections and pass the case to issue. Applicant invites the Examiner to telephone his attorney at (610) 359-3480 if he believes that a discussion of the application might be helpful.

Respectfully submitted,

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first-class mail, with sufficient postage, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on October 24, 2005.

Kevin M. Carroll
Name of person signing

Signature